From the Source to the Sea: An Innovative Program for Homeschool Families

PROJECT ABSTRACT

The Florida Aquarium will parb1er with the Lowry Park Zoo, Nature's Classroom, and the Florida Parent Educators Association (FPEA}-District V, to develop, pilot test, and disseminate a comprehensive informal learning program for homeschool families within the West Central Florida region. Approximately 50 home school families for a total of 60 student participants at the middle-school age learning level will be targeted for the pilot program. From the Source to the Sea: An Innovative Program for Homeschool Families, will utilize the Hillsborough River Watershed in its
entirety, as a focal-point for an integrated hands-on learning science-based curriculum. Working with FPEA, Educators from the Aquarium, the Zoo, and Nature's Classroom will provide homeschool students and their families with a complete curriculum, utilizing Florida State Standard Science Goals as a guide.

The proposed program will incorporate on-site instruction at informal learning centers, field activities, family activities, parent workshops, and in-home distance learning components. Monthly units will focus on specific habitats within the Hillsborough River Watershed, from its beginning at the headwaters of the Hillsborough River and ending at the mouth of the River in Tampa Bay. Field trips sites will include Green Swamp: the Zoo's 1300-acre endangered species preserve, which is the location of the headwaters of the Hillsborough River; the Lowry Park Zoo facility and its *River Odyssey Ecotour* boat ride along the Hillsborough River; Nature's Classroom: a 365-acre environmental education site located alongside the Hillsborough River; and the Aquarium facility and its Bayside Field Studies Station on Fantasy Island in the mouth of Tampa Bay. In addition to informal classroom instruction and field experiences, participating homeschool families will also receive pre- and post-field trip activities, take-home activity kits, website resources, ongoing instructional staff support to continue learning in the home environment, and parent workshops to better enable participants to utilize the curriculum. Family nights and outings will provide an opportunity for shared learning experiences in a fun setting.

Through this innovative program, homeschool families will be provided with an opportunity to strengthen their science curriculum, while increasing homeschool students' skills, knowledge, and interest in science. This program will also allow our organizations to increase homeschool participants' awareness of preservation and conservation issues. In order to assist homeschool students in fulfilling their service-Iearning requirements for college scholarships, our organizations will also expose participants to career and volunteer opportunities within informal science centers.

The pilot project will include extensive evaluation that will be used to modify program components and activities for long-term implementation as part of the Florida Aquarium and Lowry Park Zoo's homeschool program offerings. Once the pilot project is completed, results and curriculum will be disseminated to other institutions in the field and other
home school organizations at the local, state, and national level through presentations at professional conferences and workshops, professional publications and journals, curriculum distribution, and via parb1ering organizations' websites.

IMLS LEADERSHIP GRANT APPLICATION NARRATIVE

I. National Impact of Proiect

"School is like starting life with a 12-year jail sentence in which bad habits are the only curriculum truly learned. " ...John Taylor Gatto, New York State's 1991 teacher of the year and current advocate for home-schooling.

Unti11980, schooling at home was illegal in the majority of states, with only 15,000 youth being educated this way. This changed drastically throughout the 1980's with strong advocacy from parents who favored homeschooling to traditional school. based learning. By 1990, the number of homeschooled students in America had swelled to an estimated 300,000 and by 1993, homeschooling was legal in all 50 states. The growth in homeschooled children continued in the 1990's and during 2001/2002 an estimated 1.7 million students were educated through homeschooling, representing a growth rate of up to 15% annually. According to author Daniel H. Pink in his book, Free Agent Nation: How America's New Independent Workers are Transforming the Way We Live. published in 2001, "Homeschooling has become perhaps the largest and most successful education reform movement of the last two decades."

According to an article in *The Wall Street Journal,* "Evidence is mounting that homeschooling, once confined to the political and religious fringe, has achieved results not only on par with public education, but in some ways surpassing it." This sentiment is echoed by Daniel Pink who states, "Homeschooled children consistently score higher than traditional students on standardized achievement tests, placing on average in the 80th percentile in all subjects. Homeschooled children also perform extremely well on nearly all measures of socialization. One of the great misconceptions about homeschooling is that it turns kids into isolated loners. In fact, these children spend more time with adults, more time in their community, and more time with children of varying ages than their traditional-school counterparts." Another misconception about homeschooling is that parents are single-handedly responsible for providing instruction to their children. Rather, homeschool families rely heavily on real-Iife experiences that can be provided through a variety of mechanisms, including the use of informal education facilities.

According to an article on the Association of Science-Technology Centers Resource Center Website, *"Making the Case for Science Centers* ", "Science Centers provide the kinds of settings in which learning takes place. ..they provide rich, social environments of the kind that support learning." The article continues, "The hands-on approach that's the hallmark of science centers has been demonstrated repeatedly to enhance learning. Students in hands-on, activity-based science programs have bee] shown to exhibit increases in creativity, positive attitudes towards science, perception, logic development, communication skills, and reading readiness. Science centers also encourage interest in careers in science, engineering and technology ." The Visitor Studies Association notes, "More and more people throughout the world are spending more and more time in environments that not only provide recreation, but have the potential to inform, enlighten and educate. Such environments include museums, art galleries, visitor centers, aquariums, botanical gardens, science centers, heritage sites, parks, zoos and other public-access educational facilities." Mark St. John, Research Fellow at the University of California, and Deborah Perry, an expert in museum visitor studies, state: "Science museums and other informal science education institutions are places where people can meet science-informally, directly and on their own terms. These informal institutions serve as a bridge between the everyday world of the visitor and the world of science and natural phenomena."

Many informal science-based education centers across the country are engaged in some level of programming specifically targeting homeschool families. However, there is no real cohesive model for this type of programming. Coordinated efforts through partnerships among informal institutions to provide this programming are not currently widespread or well defined. With homeschooling becoming one of the fastest growing segments of the K-12 educational framework, as an alternative to traditional public school education, there is a need to develop a model for a more coordinated approach. This should include networking among appropriate informal partners to develop curriculum and programming to better serve the growing number o homeschool families. In response to this need, The Florida Aquarium, Lowry Park Zoological Society, Nature's Classroom and the Florida Parent Educators Association are collaborating to develop a unique model for science-based curriculum for homeschool families. This program will incorporate an interdisciplinary approach utilizing the resources of informal science education facilities in the Tampa Bay community, coupled with distance learning components through take-home activity kits and website-based programming.

II. Adaptability of Project

The proposed project will serve as a model for similar collaborative programs that can be implemented in other communities throughout Florida, as well as other regions and states. As a part of the assessment conducted in the preliminary planning for the program, Association of Science- Technology Centers (ASTC) and Aquarium and Zoo Association (AZA) member institutions were surveyed to assess what types and levels of homeschool programs are currently being offered at informal science-based cultural organizations throughout the country .Results from these surveys confirmed that while many informal science institutions (zoos, aquariums, botanical gardens, nature centers, science centers) have some level of programming geared to the homeschool family at their individual institutions, there is a lack of comprehensive programming targeting this rapidly expanding audience; and very little, if any, coordinated partnership efforts among community cultural organizations and homeschool organizations to provide this type of comprehensive curriculum and programming.

The proposed **From the Source to the Sea: An Innovative Program for Homeschool Families** pilot project will combine the resources of community cultural institutions to develop a cohesive, comprehensive science-based curriculum for home school families that can be replicated in other communities. This

pilot project will be a partnership effort incorporating a non-profit community-based homeschool association, a nature center, a zoo and an aquarium. Once completed, results from the project will be shared with other cultural organizations throughout the country through a variety of mechanisms, including presentation at professional conferences, articles in professional journals, and sharing of curriculum with other interested institutions throughout the country .It is our goal that results from this project will be used to inspire and guide the development of similar
--programs, utilizing the unique cultural resources of a given community .For example, this same model could be used by other cultural disciplines, such as art and history, to forge program partnerships with homeschool organizations in their communities. In addition, the actual curriculum and activities developed through this pilot project will be shared for potential replication and adaptation at locations throughout the country.

III. Design of Project *Needs Assessment:*

In order to lay the conceptual planning framework for the project, an initial needs assessment was conducted by the partners and included focus group sessions with homeschool parent representatives. In addition, a written survey was e-mailed to approximately 10,000 homeschool families in Florida and approximately 875 (8.75%) responses were received. Results were used to assess general curriculum/program needs and establish interest levels for specific components that might be included in the proposed project. This assessment process also included meetings with Florida Parent-Educators Association representatives.

Results from the focus group sessions established the following:
>The majority of home school parents feel that they are lacking in science curriculum and teaching skills; > A strong interest in hands-on activities and field experiences in the sciences was expressed; >The need for additional Internet Web-based learning emerged;
> Informal science facilities, such as zoos and aquariums, get children excited about learning; > There is a need for programs that reach out to homeschool families;
> There is a need to have affordable informal experiences that complement existing science curriculum used by homeschool families;
> Programs offered to homeschool families at informal science facilities, such as aquariums and zoos, need to include pre- and post-visit information to supplement what is learned through field experiences;
> Parents need assistance to continue to reinforce the learning concepts introduced at the informal science facilities.

Results from the written surveys to homeschool families revealed that:
> 90% of respondents would utilize student activities, classes and workshops at informal science institutions to assist in teaching science subjects to their children;
> 90% of respondents would utilize field-based activities at local nature sites to assist them in teaching science subject matter; > 80% of those surveyed indicated that they would utilize take-home kits to assist in teaching science subjects;
> 75% of those surveyed indicated that they desired more web-based learning opportunities to teach science subjects;
> 60% of respondents indicated a desire to participate in family activities at informal science education and nature-based facilities, such as The Florida Aquarium and Lowry Park Zoo;
> 87% of all respondents said they were interested in programs on marine science; 90% on animal science; 60% on physical science and 50% on general biology.

The initial needs assessment activities resulted in the establishment of three primary assumptions to guide design of the proposed pilot project:
1. Homeschool families desire assistance to more effectively teach their children science and related environmental subjects.
2. While many informal education science centers already provide some level of programming specifically targeting homeschool families, there is a lack of coordinated, collaborative efforts among community partners to provide these programs.
3. A more coordinated and comprehensive approach would be beneficial to both homeschool families and informal learning- based educational organizations.

To facilitate this need, The Florida Aquarium, Lowry Park Zoo, Nature's Classroom and the Florida Parent-Educators Association District V, will partner to develop, pilot test and evaluate a comprehensive informal learning-based program for homeschool families in the West Central Florida region. Once the grant period is concluded, the program can also be modified

for long-term implementation and for replication in other communities. The pilot project will target students at the middle school-age learning level, while also incorporating activities for parents and siblings to address the unique needs and learning styles of homeschool families. Approximately 50 homeschool families for a total of 60 student participants will be targeted for the pilot program.

The Partners:

Florida Parent-Educators Association (FPEA). District V

FPEA is a nonprofit, self-supporting, statewide homeschool association serving Florida homeschooling families. It provides information, encouragement and connection to both individuals and local homeschool support groups. FPEA is divided into 12 districts throughout the state, each having an individual director.

FPEA District V represents five central west coast counties (Hillsborough, Pasco, Pinellas, Polk and Hernando) that will participate in the pilot project. FPEA currently has an estimated 10,000 member families statewide. A statewide conference is held annually and Florida's conference has surpassed all other states in size and attendance, with over 10,000 conference attendees in 2002.

The Florida Aquarium. Inc. (FLAq)

The Florida Aquarium is located in Tampa, Florida at the Port of Tampa on Tampa Bay. It is the largest, not-for-profit, public aquarium in Florida. FLAq's mission is to "create engaging experiences that inspire a sense of wonder, understanding and stewardship for our unique aquatic environments." Opened in 1995, the 154,000 square-foot Aquarium facility houses a living collection of over 9,500 species in four primary exhibit galleries--'-Wetlands, Bays and Beaches, Coral Reefs and Sea Hunt.

The Aquarium serves approximately 600,000 visitors of all ages and backgrounds annually, including 75,000 school students and teachers. In addition to its public exhibition program, FLAq provides comprehensive educational programs for individuals, families and groups, including school programs, teacher education, continuing education opportunities, field experiences, outreach and special programs targeting traditionally underserved audiences. In addition to programs inside the facility, FLAq, in partnership with the neighboring Tampa Port Authority , recently completed the restoration of a small three-acre man-made spoil island located in Tampa Bay (known to the local community as Fantasy Island), at the end of the Hillsborough River Watershed, which had been overrun with exotic vegetation. The restored area has now been replanted with habitats representative of the Bay. Currently under construction is a dock to accommodate the Aquarium's 49-passenger ecotour boat and provide public access to the island, a covered outdoor classroom and a series of interpretive trails. This site will be used extensively for educational programming.

Low~ Park Zoological Society (LPZ)

Lowry Park Zoo, located in Tampa, Florida has been in existence for over 46 years, undergoing a major transformation in the 1980's, which resulted in a complete rebuilding of the Zoo and the creation of a modern-day institution. The Zoo serves 700,000 visitors annually, and is the highest attended not-for-profit cultural institution in Florida. The mission of the Zoo is to "preserve and exhibit Florida wildlife and animals from around the world. The Zoo is dedicated to serving as an educational resource for the community and providing an exciting, nature-based entertainment destination for families, schools, organizations, and visitors." In addition to its public exhibition program, the Zoo offers extensive educational programs for individuals, families, and groups, and recently completed the Florida Environmental Education Center (Zoo School), adding 11 new classrooms, a resource room, and an exhibit hall, dedicated to educational programming. The Zoo also has a certified daycare and a licensed preschool program. In addition to its zoo facility, Lowry Park operates a satellite facility at the Green Swamp, which is home to the Zoo's Endangered Species Preserve. This Green Swamp is a wetland habitat that encompasses over one-half million acres in central Florida. The area contains some of central Florida' s last pristine wilderness. The Lowry Park Zoo 1,300-acre Endangered Species Preserve is home to a variety of endangered and threatened plant and animal species, representative of Florida's unique natural habitats. The preserve also encompasses the headwaters of the Hillsborough River Watershed. The Zoo recently initiated the *River Odyssey Ecotour,* a boat ride where visitors can explore various wildlife species in their natural habitat. The boat departs from Lowry Park and embarks on a journey along the Hillsborough River.

Nature's Classroom

An outdoor educational center for Hillsborough County Public Schools, Nature's Classroom is located on 365 acres of land, bordering the Hillsborough River, owned by the Southwest Florida Water Management District and leased to the School District. Nature's Classroom offers all public school sixth-grade students in Hillsborough County a three-day, hands-on, minds- on learning experience. The program has evolved to become an integral part of the school district's curriculum. Since 1969, more than 300,000 students have attended this outdoor environmental program. This year, nearly 13,000 students will participate in the three-day field study. This field experience is combined with two weeks of classroom study utilizing reading, writing and math skills in investigating the interrelationships found in the Hillsborough River Watershed. The six activities of the field experience include an Upland/Wetland Hike, Shoreline Sampling, Animal Compound, Interpretive Center, Orienteering and River Exploration. When not I use for School District programming, Nature's Classroom is available to other outside groups. The staff at Nature's Classroom has worked closely with the staff from the Southwest Florida Water Management District to develop an award-winning program that has withstood the test of time. In 2001, Nature's Classroom was selected by the Florida Department of Education as one of the top ten sustainable Environmental Education programs in the state. Nature's Classroom is currently undergoing major renovation and upgrading of facilities and habitats through a $3.6 million capital campaign that is being conducted by the Hillsborough Education Foundation. A new interpretive environmental studies center, administrative/welcome center, aviary, animal habitats, docks, pavilions, and other facilities are planned.

Project Goals:

I. Increase homeschool student participant skills, knowledge and interest in science

2. Increase homeschool parent opportunities to assist in their children's science education 3. Increase homeschool families use of informal science learning centers

4. Increase participant awareness of conservation issues in their communities

5. Increase homeschool student participation in volunteer programs at informal science centers 6. Increase participant awareness of available science career opportunities

7. Reach approximately 50 homeschool families for a total of 60 homeschool student participants through the pilot project 8. Evaluate the pilot program's overall effectiveness to determine modifications for long-term program implementation

Project Description:

The Florida Aquarium will partner with FPEA, Lowry Park Zoo and Nature's Classroom to provide a comprehensive informal learning-based educational program for homeschool families in the five-county West Central Florida region, encompassing Hillsborough, Pinellas, Polk, Pasco and Hernando counties. Approximately 50 homeschool families will be selected to participate in this pilot project, for a total of 60 student participants at the middle school-age learning level. Once the pilot project is completed, the program will be modified, based on evaluation results, for long-term use. Year one of the program will include the development of the curriculum framework, selection of the pilot program participants, development of program activities and evaluation tools, solidification of field trip sites and logistics, development of take-home kits, and hiring of a contract project coordinator and program instructors. Year two will be the actual pilot testing of the program components and activities, and evaluation of program components using an outcome-based evaluation model. Year three will include any necessary modifications to the program, based on evaluation results, for long-term implementation and dissemination of project results to the field.

The proposed program will utilize Florida Sunshine State Standards in Science as a guide to develop a focus on learning by doing conceptual curriculum framework. This comprehensive program will include field activities, on-site instruction at informal learning centers, parent and family activities, and in-home distance learning components through take-home kits and via the internet. The curriculum developed for this pilot project will focus on the Hillsborough River Watershed in its entirety, beginning at the headwaters of the Hillsborough River in Lowry Park Zoo's Green Swamp Preserve, encompassing Nature's Classroom located in the center of the Watershed, and ending at the mouth of the River in Tampa Bay at the Florida Aquarium's restored island site, where the watershed concludes. The focus on the Hillsborough River Watershed will serve as a basis for teaching science-based curriculum with an integrated approach that incorporates elements of science, math, language arts and history .Preliminary design for the proposed project curriculum will include monthly units that focus on specific habitats within the Hillsborough River Watershed, from its beginning source at the Green Swamp to its conclusion in Tampa Bay.

The framework for **From the Source to the Sea: An Innovative Program for Homeschool Families** will focus on one topic per month, throughout the course of a year that explores Florida science with an emphasis on marine science and zoology in the context of the Hillsborough River Watershed. Preliminary concepts for these topics, which will be solidified during the year one program development phase, include:

- Watersheds -What is a Watershed and Why is it Important .Regional Water Sources -Aquifers and Rivers
- Primary Habitats Found in a Watershed, including plants & animals -freshwater, wetlands, uplands, estuary, swamp, bogs and riverine
- Water Use Within a Watershed
- Ecosystem Ecology, including plants and animals within an ecosystem .Water Quality and Water Pollution
- Bird Populations -Nesting Birds and Migratory Birds Found in the Watershed .Invasive Species Found in a Watershed, including plants and animals .Economic and Historical Attributes in a Watershed Region .Biodiversity in a Watershed
- Primary Environmental Issues in a Watershed
- Endangered and Threatened Species Found in a Watershed

A variety of methodologies and instructional strategies will be used to help participants explore these topic areas:

On-Site Instruction At Informal Science Facilities

The beginning of the program curriculum will take place at The Florida Aquarium and Lowry Park Zoo, where informal science educators will lay the groundwork and provide basic foundations for the yearlong program. At these sites, student participants will interact with informal science educators and participate in hands-on activities, focusing on watershed concepts. Students
and their families will have the opportunity to experience typical Florida habitats, including plants and animals that live in these habitats, in a controlled setting, prior to actual field experiences. On-site instructional strategies will include chemistry and biology lab activities, such as microscope observations, use of groundwater and surface water models, proper use of field equipment such as water quality testing kits and data collection methods and analysis, and animal and plant identification. The
50 participating families targeted for the pilot project will be given yearlong family memberships to both the Aquarium and Zoo facilities. This will enable these families and their students to have ongoing access to the resources of the two facilities during times when structured activities of the project are not scheduled.

Field Trip Activities

Field trip activities will include: (I) Lowry Park Zoo's Endangered Species Preserve in the Green Swamp at the beginning of the Hillsborough Watershed; (2) Lowry Park Zoo's *River Odyssey Ecotour* Hillsborough River boat journey (3) Hillsborough County School District's Nature's Classroom, located on the Hillsborough River in the middle of the Hillsborough Watershed; and (4) The Florida Aquarium's Bayside Field Station, located on Fantasy Island in Tampa Bay. Sample activities for these field experiences may include an introduction to the history of the area, a visit to the Zoo's Red Wolf Management and Reintroduction Enclosure, water sampling and water quality testing and comparison at all of the sites, transects, seining,
trawling, plankton studies, plant and animal identification in the field, comparison of wet and dry natural communities, invasive species studies, comparison of upland and riverine ecosystems, observation of marine mammal behaviors, and participation in hands-on habitat restoration activities. During student participant on-site instruction and field activities, education staff will offer optional informal activities for parents and siblings who accompany them.

Web-based Activities

Web-based activities will be used to prepare students for field activities, as well as connect and reinforce concepts learned through informal science center visits and field activities. These may include research projects, reading materials, and
interactive on-line activities for learners. Web-based activities will provide a mechanism to connect program components, provide continuity in the learning process, provide continued support, and build rapport between program participants and informal educators.

Take-Home Kits

Take-home kits will be developed to support and reinforce concepts explored through on-site instruction and field trip activities.
These kits will provide simple activities that student participants can do at home with parents and other family members. Kits will consist of backyard and kitchen science activities, such as home water quality testing, animal population studies in the backyard, and plant identification. These kits will be self-contained with all materials needed to complete the activities, and will also include resource materials, such as websites and book lists that can be used for further study of the subject matter.

Parent Activity Sessions

This component of the program will give parents background information and demonstrate simple activities that they can replicate at home with their children, provide the opportunity for parents to share ideas with other parents, and create a support network for homeschool science education. These activities will complement other components of the curriculum and provide an increased comfort level for parents in teaching science concepts. Sample activities will include instruction on use of take- home kits, additional make-and-take projects, question-and-answer sessions with scientists, and tours.

Family Activities

Homeschool families, in contrast to more traditional school-based families, take a more holistic approach to learning through experiential activities. To meet this need, the program will provide opportunities for all family members to learn and play together in informal, yet somewhat structured settings. These programs will be designed so that student participants can share what they have learned with other family members. Students may even take the role of teachers and demonstrate their new knowledge of our local watershed. These activities may include facility open-houses, sleepovers, and weekend outings such as canoeing and kayaking trips.

Volunteer Oportunities

All Florida high school students, including homeschool teens, are required to complete community service learning hours in order to qualify for state scholarship funds for college. As a part of the proposed project, The Florida Aquarium and Lowry
Park Zoo will expose teen participants to service learning opportunities available through volunteer programs at both facilities. These opportunities include both assistance with animal care and interpretive activities with visitors and groups.

IV .Project Management Plan

The Florida Aquarium has extensive experience in providing environmental education, for the general public, school students, teachers and specialized audiences. The mission of the education department is to provide creative, credible, quality, engaging educational opportunities that meet the needs of a diverse community and visiting public. The Aquarium began providing educational programs in 1993 through outreach to the community , prior to opening its facility .Since opening, the Aquarium has continued to provide outreach programs, as well as extensive on-site programs for the general public and specific audiences. This includes formalized programs for school students and teachers that meet and further state education standards. The Florida Aquarium has become a leader in teacher education for the state of Florida through its Science Education at Sea (S.E.A.S.)
marine science education program for middle and high school teachers. Developed in partnership with a planning team from throughout the state, this program, now in its fourth successful year, serves teachers statewide through a series of one-day workshops and a summer residential program. It is the only formalized training of its magnitude in this subject area for the state of Florida. On-site school programs continue to grow annually, as evidenced by a 23% increase in school program attendance over the past two years. Community programs, which include offerings such as workshops for families, field experiences, sleepovers, scout programs and summer camps, have experienced a 25% growth over the same period. The Aquarium began providing programs for homeschool families in 1998, and has continued to expand these offerings to meet demands over the past four years. The first annual open-house for homeschool families was held in 2002, with over 1,400 participants. Other
significant examples of experience in the development of education programs include (I) the development of the Bayside Field Studies Program for its restored Fantasy Island site, working with surrounding school districts to develop a comprehensive field- based experience for high school marine science students, including pre-and post-classroom activities; (2) development of a school and public program in conjunction with the Aquarium's on-site Caribbean Coral propagation facility; (3) development and hosting of an annual Regional Ocean Conference for secondary school students and teachers, now in its fifth year; and (4) development and implementation of a comprehensive curriculum on stormwater education with the Southwest Florida Water Management District. The Aquarium's standing Education, Research and Conservation Committees provide ongoing expertise to assist staff in program development.

Founded in 1987, Lowry Park Zoo's Education Department created partnerships with local school systems and Florida's
Regional Center of Excellence for Science and Math for guidance. The Zoo's education program offerings have increased from 20 in FY99 to 450 in FY02. A diverse range of programming, coupled with programs that reach out to special populations, maximize the Zoo's audience impact. Educational and interpretive activities in FY02 included: Zoo classes serving 129,000; teacher in-service, reaching 500 teachers; Zoo to You Outreach serving 21,683 people; and Environmental Education Summer camp serving 1,330 students aged 3-15. A total of 11,445 children and families participated in NiteSite sleepover programs, Girl Scout Days, Boy Scout and Girl Scout badge programs, birthday parties, behind the scene tour programs, and EcoSleuth

programs conducted at the Green Swamp Wildlife Preserve. The Zoo also offers a year-round educational preschool program for children 3-5 and a Daycare for infants 12-36 months. In 2000, the Zoo began offering programs for homeschool participants and now offers four 2-hour themed programs each month. During FY02, 246 homeschoolers participated in these programs.

The positive responses to homeschool programs at the Aquarium and the Zoo were the catalyst for the initiation of our home school focus group sessions and subsequent needs assessment surveys. This laid the framework for the development of the proposed **From the Source to the Sea: An Innovative Program for Homeschool Families** pilot project, for which IMLS Leadership funding is being requested. The Florida Aquarium, Inc. and its partners for the proposed project, Lowry Park Zoo, Nature's Classroom and the Florida Parent-Educators Association are committed to the successful development, implementation, and dissemination of this pilot program. Collectively, our organizations have initiated and implemented projects of this magnitude in the past. All partners have agreed to commit appropriate staff, facilities and resources to the project. The statewide board of the FPEA voted to actively participate in all pilot project components. The CEO's of The Florida Aquarium and Lowry Park Zoological Society and the head of Nature's Classroom have agreed to support this project on behalf of their organizations and have signed the partnership agreement included with this application.

In order to complete the proposed project, the partners have committed the following resources:
The Florida Aquarium -The Florida Aquarium will dedicate the necessary time of existing staff to complete the project and provide overall management and coordination for the program. This will include an estimated 10% of the Director of Education's time for the three-year duration of the program; 15% of the Education Manager's time for year one and two of the program; and 20% of the Aquarium's Homeschool Coordinator's time for year one and two of the program. A contract curriculum coordinator (to assist all partners) and a part-time contract Aquarium instructor will be hired for the project through the grant. The Aquarium will commit use of its 154,000 square foot facility for programming associated with the program, including classrooms for student activities and parent and family workshops, and its 49-passenger eco-tour boat and restored island site as a field trip site for the project. As the lead applicant for the project, The Aquarium will also be responsible for primary program coordination between the partners and management and reporting of all grant funds and project activities.
Lowry Park Zoological Society. Inc. -Lowry Park Zoo will dedicate necessary staff time to complete the project, including an estimated 10% of the Director of Education's time for the three year duration of the program; 15% of the Classroom and Programs Coordinator for year one and year two of the project and 20% of the Zoo's Homeschool Coordinator's time for year one and two of the program. A part-time, on-site contract Zoo instructor, dedicated specifically to this project, will be hired through the grant for day-to-day instructional activities. Lowry Park Zoo will commit use of its 41 acre zoo site and classrooms for programs associated with the project, including student, parent and family activities; its I ,300-acre green swamp preserve site as a field trip site; and its 49-passenger, *River Odyssey Ecotour* boat for the program.
Florida Parent-Educators Association -FPEA will work with the Aquarium, the Zoo and Nature's Classroom staff in the development of the curriculum and program activities, throughout the process, to ensure that homeschool family needs are met. The Association has agreed to market the pilot program to FPEA-member homeschool families and spearhead the selection of approximately 50 homeschool families and 60 student participants for the pilot project. Once the pilot project and evaluation are completed, FPEA will work with project partners to modify and revise the program for long-term implementation. FPEA will also continue to promote the program to FPEA homeschool families (currently approximately 10,000 family households) once the grant period is completed, and will assist other project partners in the dissemination of the project results at the local, state and national level.
Nature's Classroom -Nature's Classroom's lead teacher will work with the Aquarium, the Zoo, and FPEA staff to develop the curriculum and program activities, assist in evaluation, and commit use of its 365-acre nature center as a field trip site for the program, including the center's instructional staff.

V .Project Budget
The proposed budget for From the Source to the Sea: An Innovative Program for Homeschool Families, totals $ 233,340. This includes $129,022 in IMLS funding and $102,218 in matching funds committed by the lead applicant and partners as cost sharing for the project. The applicant and partner institutions believe that the budget for the project is sufficient and appropriate to carry out the activities outlined in the grant application. The Florida Aquarium, Lowry Park Zoo, and Nature's Classroom, working with the Florida Parent-Educators Association, will utilize a team approach, incorporating existing staff and a grant- funded contracted curriculum coordinator, to carry out the development of the program curriculum and activities, pilot testing and program evaluation. Allocations of permanent staff time dedicated to the project are based on the anticipated level of involvement, using prior projects of this magnitude that our institutions have been involved in as a guide. Two part-time dedicated instructors, one for The Florida Aquarium sites and one for the Lowry Park Zoo sites, where the majority of activities including the web-based components of the program will occur, will be hired through the grant to carry out day-to-day instructional activities. This will include ongoing interfacing with student participants and families. Permanent staff will also be responsible for the dissemination of project results at the statewide, regional and national level. Nature's Classroom, as an important field trip site and partner for the project, has agreed to provide existing staff for the development, pilot testing and evaluation of the program. FPEA will also contribute their staff resources to the project, assisting in the program development, marketing and evaluation. Two grant-funded, part-time instructors and a contracted curriculum coordinator for the program, IMLS funding will be used for professional evaluation services for the program, pass-protected website development costs and maintenance, purchase of needed equipment, materials and supplies, a portion of the cost of family memberships associated with the pilot testing year of the program (year 2), and dissemination of the project results at professional conferences and meetings. Funds have also been budgeted for each year of the project for IMLS Leadership Grant workshops. A detailed explanation of all project budget components is included in the budget justification portion of the grant proposal.

VI. Contributions Toward Project

Total costs for the proposed Source to the Sea: An Innovative Program for Home School Families is $233,340. Of this total budget, $129,022 is being requested from IMLS. $102,218, or 44.8%% of the program costs, will be contributed by The Florida Aquarium as the lead applicant and by the other project partners. These contributed costs include $70,374 by the applicant and project partners for permanent staff salaries and fringe benefits directly associated with the project; $25,804 in indirect costs; $4,000 in consultant fees (FPEA Regional Director's time dedicated to the project); $1,750 towards one-year family memberships during year two, the pilot testing year of the program; $1,200 for food costs for field trips, family activities and planning meetings; $600 for boat trip expenses and $500 for website maintenance.

VII. Project Personnel

Key personnel for the proposed project include:

Rebecca Clayton. Director of Education. The Florida Aquarium

Ms. Clayton will serve as overall Project Director, with broad oversight for all aspects and components of the program. Ms. Clayton holds a B.A. in Geography and Education, and brings over 25 years of experience in the field of science and environmental education to the project. This includes 11 years as an elementary and middle school classroom teacher; nine years as Education Coordinator for the Southwest Florida Water Management District; one year as Director of Education for Lowry Park Zoo; and six years as Education Director for The Florida Aquarium. Ms. Clayton's professional experience includes overseeing daily operations of education functions; supervision and management of education staff and volunteers including hiring, workload distribution, evaluation and training; strategic planning; departmental budgeting and tracking; development of comprehensive curriculum packages for school students, community programs, teachers, and the general public; program delivery; ongoing program evaluation and analysis; marketing of educational programs; grant proposal development, contract development and project management; organization and planning of educational special events; development of educational exhibits and displays, including overseeing of construction of a children's discovery area, animal holding, outreach facility and amphitheater; and planning and development of partnerships with organizations and institutions at the national, state and local level. She is a member of several professional associations, including the American Zoo and Aquarium Association, Florida Association of Zoo and Aquarium Educators, Florida Marine Science Educators, National Marine Educators Association, Florida Association of Science Teachers, Florida Association of Museums, National Association for Interpretation, The Ocean Conservancy, The Nature Conservancy and Tampa Educational Cable Consortium.

Deborah Berger. Education Manager. The Florida Aquarium

Ms. Berger, will assist with development and coordination of the project, including detailed planning, curriculum development, program pilot testing and evaluation, supervision of education staff involved in the detailed operation of the program and coordination with other project partners in the development and implementation of the program. Ms. Berger holds an M.A. in Teaching Biology .She brings 10 years of experience in the field of teaching and educational program development to the project, including three years as an elementary and middle school teacher; four years as an instructor and coordinator for Mystic Aquarium and Institute for Exploration; and three years as Education Manager for The Florida Aquarium. As Education Manager, Ms. Berger provides daily management of Aquarium Education Department activities, including supervision of instructional staff, development of curricula, on-site school and community programs, teacher education programs, outreach programs and the JASON project. Ms. Berger has presented at and is a member of several professional associations, including the National Marine Educators' Association, the Southeastern New England Marine Educators Conference, and the Florida Marine Science Educators Association. She has extensive experience in writing and implementing Internet-based curricula.

Wendy Meers. Instructor & Home School Program Coordinator. The Florida A Aquarium

Ms. Meers will assist in the development of the homeschool program curriculum and all related activities, and with supervision of hands-on instructional aspects of the project for the Aquarium component, with the assistance of a part-time dedicated instructor for the program, including student, parent and sibling activities. She will also assist in the development of pre and post activities, website lessons and take-home activity kits. Ms. Meers holds a B.A. in Anthropology, with concentrations in museum education and ethnography, and has 10 years of progressive experience in museum collections, operations and education, including two years at the William Hammond Mathers Museum and the Wylie House Historic House Museum at Indiana University; two years at the Baltimore Zoo; two years at the Calusa Nature Center and Planetarium; two years at the Imaginarium Hands-on Children's Museum and Aquarium; and two years at The Florida Aquarium. Ms. Meers has been a guest lecturer at Corkscrew Swamp Sanctuary and Florida Gulf Coast University and is a member of the American Association of Museums, American Zoo and Aquarium Association and Baltimore Zoo Docent Association.

Jennifer Bacon. Curator of Education. Lowry Park Zoo

Ms. Bacon will oversee the Lowry Park Zoo component of the Source to the Sea project. She holds a B.A. in Psychology and Anthropology .She has three years experience in the education field, two of these in the Education Department at Lowry Park Zoo. Ms. Bacon is responsible for all daily operations of the Zoo's Education Department, including camps, outreach, homeschool programs, volunteers, pre-school and daycare programs. Under her leadership, new curriculum for teachers for grades K-12 were developed to prepare for the opening of the Zoo's new Florida Environmental Education Center (Zoo School) in late 2001. All programs are designed to correlate to Sunshine State Standards with Florida Comprehensive Assessment Test (FCA T)-friendly activities. The Zoo's education program offerings have increased from 20 in FY99 to 120 in FYOO to 150 in FY01 and to 450 in FY02. Ms. Bacon initiated the Zoo's successful pre-school and daycare programs at the Zoo School. Each of these programs has remained filled to capacity since they opened to the public in FY02. Ms. Bacon is currently enrolled in a Directors Credentials course in Early Childhood Education. She is on the Education Channel Board of Trustees and is a member of the Florida Association of Museums and the American Zoo and Aquarium Association.

Eric Detrick. Classes and Programs Coordinator. Lowry Park Zoo

Mr. Detrick will serve on the Lowry Park Zoo's development team for the project, including assisting with detailed planning, curriculum development, program pilot testing and evaluation, supervision of education staff involved in the detailed operation of the program and coordination with other project partners in the

development and implementation of program components. He will assist in the development of pre and post activities, website lessons and take-home activity kits. Mr. Detrick holds a B.S. in Early Childhood/Elementary Education, and has five years experience in teaching and educational program development, including as a Head Start teacher, YMCA Camp Instructor and Programs Coordinator for the Lowry Park Zoo. He is responsible for planning and organizing the Zoo's educational programs and manages a team of four Zoo educators. He helped launch the new year-round preschool at the Zoo School in FY02. Mr. Detrick assists in teacher training programs and works with the Zoo's Outreach Program. Mr. Detrick coordinates the design and printing of Zoo School education program quarterly catalogs.

Colleen Kremer. Lowry Park Zoo

Ms. Kremer will assist with the development of curriculum and program activities for Zoo components of the pilot project and will supervise day-to-day hands-on instruction for the program, with the assistance of a part-time dedicated instructor for the project. Ms. Kremer holds an Ed.S. in School Psychology and brings 23 years of experience to the project. This includes 19 years of experience as a school psychologist for the Pinellas County School District and two years as the Homeschool Coordinator and Instructor for Lowry Park Zoo.

La Wanda Sutherland. District V Director. Florida Parent-Educators Association

Ms. Sutherland will serve on the program development team throughout the project, interfacing with the partners and representing the needs and interests of the homeschool community. Ms. Sutherland holds a B.A. in Education and taught in the public school system prior to homeschooling her children. She has been on the board of directors for the Florida Parent Educator's Association (FPEA) for four years. Part other duties as District V Director include providing information and help to homeschoolers, writing articles for the *Almanac,* FPEA 's quarterly publication, providing interviews with the media concerning homeschooling issues, and speaking at various educational events. She also serves on the board of a local home school support group in the Tampa area. Ms. Sutherland has been homeschooling her three children, ages 10, 12, and 15, for eleven years.

Karen Johnson. Lead Teacher. Nature's Classroom

Ms. Johnson will serve on the project curriculum planning team, will provide instructional staff to lead field experiences at the Nature's Classroom site, and assist with evaluation. She holds a B.S. in Elementary Education, a Masters in Educational Leadership and Administration, and is certified in Gifted Education. She has 14 years in both elementary and middle school education with the Hillsborough County School District. Ms. Johnson is currently the Lead Teacher at Nature's Classroom Outdoor Environmental Studies Center, a Hillsborough County Public School that serves all sixth grade students of the county. Her responsibilities include instructing the outdoor field activities for the students and performing the administrative duties for the facility: staff training, curriculum development, scheduling and overseeing facility construction and general management. She has been actively involved in the Hillsborough County Regional Science Fair for 12 years, is a current member of the Hillsborough River Greenways Education and Outreach Task Force and the Hillsborough County Coordinator for the Southwest Florida Water Management District, SPLASH! Grants.

Linda Cronin-Jones. Professional Evaluator

Dr. Cronin-Jones has agreed to guide the development of appropriate and effective outcome-based evaluation tools for all components of the project and assist staff in the evaluation process. She holds a Ph.D. in Science, degrees in Natural Science and Science Education, and a B.S. in Wildlife Ecology. Dr. Cronin-Jones teaches science and environmental education theory, methods and research; directs the secondary science PROTEACH masters program; teaches undergraduate and graduate courses in science and environmental educator teaching methods and informal science education at the University of Florida. Her research experiences include science and environmental education curriculum development and evaluation and international science environmental education. She has served as Principal Investigator or Co-Principal Investigator for 11 state or nationally-funded projects. Dr. Cronin-Jones is a member of the American Educational Research Association, North American Association of Environmental Educators, School Science and Mathematics Association and the National Science Teachers Association. Dr. Cronin-Jones was asked to serve as the evaluator for the project because of her extensive experience in informal science learning evaluation and because of her close proximity to the project location (approximately two hours away). This will enable her to be readily available for on-site evaluation work and meetings with the partner members of the curriculum development team.

VII. Project Evaluation

The partners for From the Source to the Sea: An Innovative Program for Home School Families will utilize an outcome- based evaluation model for the pilot project. Evaluation results will be used to revise and modify program components for long-term implementation. Evaluation tools developed through the pilot phase of the project will be integrated into the program for long-term use. Linda Cronin-Jones, Ph.D., a professional evaluator, will guide staff in the development of appropriate evaluation tools to measure established outcomes for the program. Outcome based evaluation measures for each of the goals established for the project include:

Outcome #1: Increase homeschool participants' skills, knowledge and interest in science.

Indicator (s):

The # and % of students who demonstrate at least a 15% increase in competency in science.

Data Source:
Pre- and Post-assessment tools

To Whom:
Students

Data Intervals:
Fall and Summer

Target:
85% of students

Outcome #2: Increase homeschool parents' opportunities to assist in their child's science education.

Indicator (s) :
a. The # and % of parents who participate in at least two parent activity sessions.
b. The # and % of parents who utilize take-home kits.

Data Source:
a.Parent participation
b. Parent take-home kit survey to be designed by evaluators.

To Whom:
a. Parents
b. Parents

Data Intervals:
a. Quarterly
b. Fall

Target:
a. 50% of parents
b. 75% of parents

Outcome #3: Increase homeschool families' use of informal science learning centers.

Indicator (s) :
The # and % of families who utilized informal science learning times centers are utilized year centers at least 6 times each year .

Data Source:
Record keeping of number of times centers are utilized

To Whom:
Families

Data Intervals:
Ongoing throughout year

Target:
80% of families

Outcome #4: Increase homeschool participants' awareness of their communit1 's conservation issues.

Indicator(s) :
The # and % of participants who Surveys, pre- and post- Students Fall and Summer 85% of students demonstrate at least a 20% assessment increase of knowledge in water resource issues.

Data Source:
Surveys, pre-and post-assessment

To Whom:
Students

Data Intervals:
Fall and Summer

Target:
85% of students

Outcome #5: Increase number of homeschool students who volunteer at informal science centers.

Indicator(s):
The # and % of students who perform volunteer service at informal science centers.

Data Source:
Volunteer sign-up sheets

To Whom:
Students

Data Intervals:
Summer

Target:
10% of students from 25% of families

Outcome #6: Increase homeschool participants' awareness of career opportunities available at science centers.

Indicator(s)
The # and % of students demonstrate an increased awareness of science center career opportunities.

Data Source:
Pre-and Post-assessment tools

To Whom:
Students

Data Intervals:
Fall and Summer

Target:
85% of students

Outcome #7: At least 80% of homeschool students enrolled in program will participate in monthly activities.

Indicator(s):
The # and % of students who participate in all monthly activities.

Data Source:
Attendance Sheets

To Whom:
Students

Data Intervals:
Ongoing throughout year

Target:
80% of students

Outcome #8: Pilot program will be rated favorably for overall effectiveness process.

Indicator(s):
The # and % of student, parent and family participants who indicate 80% satisfaction with program overall effectiveness.

Data Source:
Assessment tools: questionnaires, surveys, observation, participation levels

To Whom:
All participants

Data Intervals:
Ongoing every month

Target:
80% of all program participants

VIII. Project Dissemination
Results of the project will be disseminated to cultural and educational organizations nationwide, through a variety of avenues. These will include: (1) informative sessions about the results of the pilot project at state, regional and national professional conferences, including the American Zoo and Aquarium Association annual conference, the Florida Aquarium and Zoo Educators Association quarterly meeting, Association of Science- Technology Center's annual conference, the Florida Association of Museums annual conference, the National Marine Educators Association, and the Florida Parent-Educators Association annual conference; (2) through articles published in professional journals and newsletters, such as the Informal Learning Review Newsletter, the AZA publications and the ASTC, FAM and FPEA newsletters; (3) distribution of results via

project partner websites; and (4) sharing and distribution of curriculum and program activities with other interested institutions and organizations, including cultural, educational and homeschool organizations, throughout the country .

IX. Project Sustainability
Once the two-year grant period has concluded and the pilot project is completed, **From the Source to the Sea: An Innovative Program for Homeschool Families** will be implemented as a long-term part of the Florida Aquarium and Lowry Park Zoo's fee-based program offerings for homeschoolers. Both the Zoo and Aquarium independently offer homeschool workshops on a limited basis, however, not of the magnitude or

depth that the proposed partnership program will provide. Both of our institutions currently offer two-hour workshops at various times throughout the year, with fees ranging from $4.00 to $9.50. These programs are well received with average participation of 10 to 15 students per class. In focus group sessions and surveys with homeschool parents, program affordability is a key issue in determining participation, since many homeschool families are one-income households. Based on this, once the Source to the Sea program is institutionalized for long-term implementation, fees for the program will be modest, designed to cover core program costs. We will also incorporate the program as part of our sponsored programs, which provides scholarships for constituents with economic need to participate in programs.